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Claims

1.   A data switch for passing packets as packet flows between a plurality of ports, the switch having:

a flow detection device for detecting a flow or group of flows to which
5   incoming packets belong; and

a bandwidth monitoring device having a RAM memory with a section for each of the flows or groups of flows, the bandwidth monitoring device being arranged to issue policing instructions based on the size of the packets and a bandwidth counter stored in the RAM memory.

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2.   A data switch for passing packets as packet flows between a plurality of ports, the switch having:

a flow detection device for detecting a flow or group of flows to which each packet belongs; and

15   a bandwidth monitoring device having a RAM memory with a section for each of the flows or groups of flows, the memory sections containing a bandwidth counter for the corresponding flows or groups of flows, the bandwidth monitoring device being arranged:

to subtract the size of the packet from the value stored in the
20   bandwidth counter to obtain an adjusted value and to issue a policing instruction according to the relationship of the adjusted value with one or more predetermined levels;

to replace the value stored the bandwidth counter by the adjusted value in the case that the packet is transmitted by the switch; and

25   to replenish the value stored in the bandwidth counter at intervals.

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3.   A data switch according to claim 2 in which the predetermined levels are different for different flows and determined by data stored in the RAM memory.

4.   A data switch according to claim 3 in which the RAM memory includes
5   control parameter indication portions for each flow or group of flows, the control indication portions indicating respective registers for storing data defining said predetermined levels.

5.   A data switch according to any of the preceding claims in which the flows, or groups of flows, are grouped into ranges, the policing instructions in
10   respect of particular flows or groups of flows depending upon the range in which those flows, or groups of flows, lie.

6.   A method of policing flows of packets within a data switch for passing packets between a plurality of ports, the method including:

storing a bandwidth counter for each of the flows or groups of flows in a
15   RAM memory with a section for each of the flows;

detecting a flow or group of flows to which each packets belongs;

subtracting the size of the packet from the value stored in the bandwidth counter to obtain an adjusted value;

issuing a policing instruction based on the adjusted value according to
20   the position of the adjusted value with respect to predetermined levels;

if, despite any such policing instruction, the packet is transmitted, adjusting the value stored the bandwidth counter by the size of the packet; and

replenishing the value stored in each bandwidth counter at intervals.

7.   A method according to claim 6 in which the predetermined levels are different for different flows and determined by data stored in the RAM memory.

8.   A method according to claim 7 in which the RAM includes control parameter indication portions for each flow or group of flows, the control indication portions indicating respective registers for storing data defining said predetermined levels.

9.   A method according to any of claims 6 to 8 in which the flows, or groups of flows, are grouped into ranges, and upon it being determined that a policing instruction is to be issued in respect of a particular flow or group of flows, the policing instruction being generated depending upon the range in which those flows, or groups of flows, lie.